



LTC-1

Gas- and liquid coolers

Series LC, LG, LT

Jacket cooler with cooling coil
versions LGC-1(S), LC-1(S)

Jacket cooler with bundle of tubes
versions LGT-2, LTC-1

Special Features

- Optimal cooling capacity
- No stagnant space
- Completely out of stainless steel 316Ti
- Dial thermometer
- Wall-mounting
- Various connection sizes available
- Other versions on request

Application

The M&C gas- and liquid coolers series LC, LG and LT are used in analytical technology to lower the dew point of humid gases or to lower the temperature of liquid media by means of water cooling.

Water, for example, serves as a coolant. The countercurrent principle used ensures optimum cooling effect.

A dial thermometer is positioned in the coolant inlet of the LC-1 and LC-1S liquid coolers (see Dimensions D: Coolant IN). In the LTC-1 liquid cooler, the dial thermometer is located in the medium outlet (see Dimensions B: Medium OUT). The dial thermometer can be used to indicate the medium outlet temperature.

The LC, LG and LT series gas and liquid coolers require little maintenance.

Description

The M&C gas coolers LGC-1 and LGC-1S are fully welded with a cooling coil in the jacket tube. The LGC-1S version is equipped with a longer cooling tube.

An integrated separation chamber in the lower part of the gas cooler ensures optimum condensate separation.

In the LGT-2 gas cooler, the medium flows through a tube bundle. There is also a separation chamber in the lower part of the gas cooler for condensate separation.

A dial thermometer is positioned in the coolant inlet of the gas cooler (see dimensions D: coolant IN), which can be used to indicate the gas outlet dew point.

The condensate produced is discharged externally by peristaltic pumps, traps or collecting vessels.

The M&C liquid coolers LC-1 and LC-1S are fully welded to a cooling spiral in the jacket pipe. The LC-1S version is equipped with a longer cooling tube.

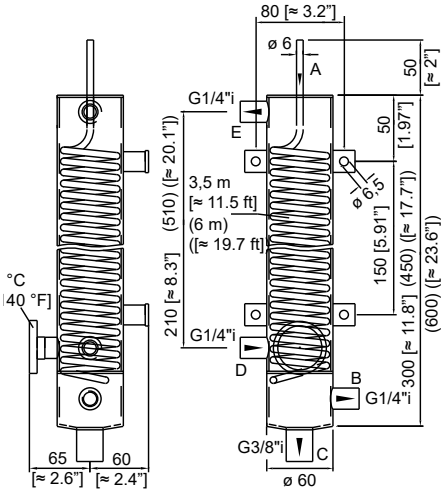
In the LGT-2 liquid cooler, the medium flows through a tube bundle. There is a distribution chamber in both the inlet and outlet areas of the tube bundle. The distribution chamber in the upper part of the tube bundle is screwed to the liquid cooler and can be loosened.

The cooling effect and the stability of the cooling depend, among other things, on the coolant inlet temperature, the coolant quantity, the medium inlet conditions, the aggregate state of the medium to be cooled, ΔT between coolant inlet temperature and medium outlet temperature as well as the ambient temperature.

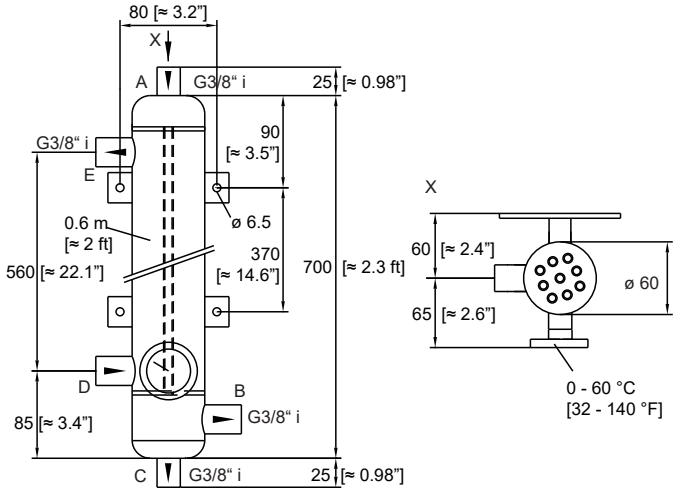
The existing coolant quality and the medium to be cooled must correspond to the material specification of the cooler.

The design and calculation of the coolers is application-specific according to the specified operating data. For your inquiry we need exact operating parameters.

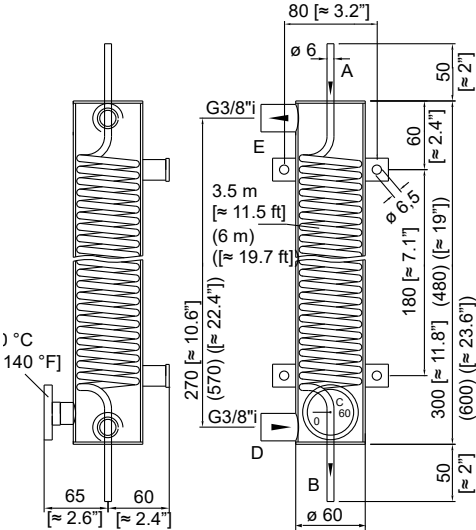
Gas cooler LGC-1 (S)



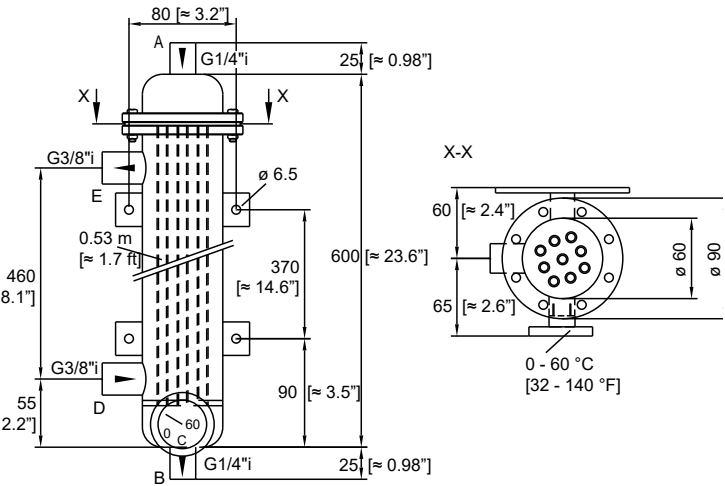
Gas cooler LGT-2



Liquid cooler LC-1 (S)



Liquid cooler LTC-1



Dimensions in mm [inches]

Connections:	A: Sample IN	B: Sample OUT	C: Condensate OUT	D: Coolant IN	E: Coolant OUT
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	Gas cooler LGC, LGT			Liquid cooler LC, LTC		
Coolant Cooler Version L	LGC-1	LGC-1S	LGT-2	LC-1	LC-1S	LTC-1
Part No.	04K1000	04K1500	04K4000	04K2000	04K2500	04K3000
Max. cooling capacity approx.	900 kJ/h	1600 kJ/h	3600 kJ/h/6100 kJ/h ¹⁾	900 kJ/h	1600 kJ/h	3600 kJ/h/6100 kJ/h ¹⁾
Dimension cooling coil	1 x 4/6 mm	1 x 4/6 mm	-	1 x 4/6 mm	1 x 4/6 mm	-
Cooling coil length	3.5 m [≈ 11.5 ft]	6 m [≈ 19.7 ft]	-	3.5 m [≈ 11.5 ft]	6 m [≈ 19.7 ft]	-
Dimension tube bundle	-	-	9 x 6/8 mm	-	-	9 x 6/8 mm
Tube bundle length	-	-	0.6 m [≈ 2.0 ft]	-	-	0.5 m [≈ 1.6 ft]
Connection A (Sample IN)	Tube ø 6mm o.d.	Tube ø 6mm o.d.	G 3/8" i	Tube ø 6 mm o.d.	Tube ø 6mm o.d.	G 1/4" i
Connection B (Sample OUT)	G 1/4" i	G 1/4" i	G 3/8" i	Tube ø 6 mm o.d.	Tube ø 6 mm o.d.	G 1/4" i
Connection C (Condensate OUT)	G 3/8" i	G 3/8" i	G 3/8" i	-	-	-
Connection D/E (Coolant IN/OUT).	G 1/4" i	G 1/4" i	G 3/8" i	G 3/8" i	G 3/8" i	G 3/8" i
Sample flow rate, recommended max.	500 l/h	500 l/h	700 l/h	60 l/h	60 l/h	200 l/h
Max. sample pressure	10 bar g	10 bar g	10 bar g	50 bar g	50 bar g	10 bar g
Max. coolant pressure	10 bar g	10 bar g	10 bar g	10 bar g	10 bar g	10 bar g
Coolant liquid flow rate	50 to 300 l/h, depending on necessary cooling capacity, coolant temperature IN/OUT, etc.					
Differential pressure ΔP sample side	30 mbar at 500 l/h	30 mbar at 500 l/h	< 1 mbar at 500 l/h	700 mbar at 60 l/h	700 mbar at 60 l/h	10 mbar at 200 l/h
Stagnant space sample side	175 ml	210 ml	370 ml/780 ml ¹⁾	44 ml	76 ml	350 ml/740 ml ¹⁾
Max. sample inlet temperature	300 °C [572 °F]	300 °C [572 °F]	300 °C [572 °F]	300 °C [572 °F]	300 °C [572 °F]	300 °C [572 °F]
Ambient temperature	+2 to +80 °C [35.6 to 176 °F]					
Storage temperature	-40 to +80 °C [-40 to 176 °F]					
Mounting	Wall-mounting					
Material of medium-contacted parts	Stainless steel 316Ti*					
Dimensions (W x H x D)	110 x 400 x 125 mm [≈ 4.3" x 15.8" x 4.9"]	110 x 700 x 125 mm [≈ 4.33" x 27.6" x 4.9"]	120 x 750 x 125 mm [≈ 4.7" x 29.5" x 4.9"]	110 x 400 x 125 mm [≈ 4.3" x 15.8" x 4.9"]	110 x 700 x 125 mm [≈ 4.33" x 27.6" x 4.9"]	120 x 650 x 125 mm [≈ 4.7" x 25.6" x 4.9"]
Weight	1.8 kg [≈ 4.0 lbs]	3.0 kg [≈ 6.6 lbs]	3.3 kg [≈ 7.3 lbs]	1.8 kg [≈ 4.0 lbs]	3.0 kg [≈ 6.6 lbs]	3.6 kg [≈ 7.9 lbs]

Options for jacket cooler with tube bundle	Gas cooler LGT-2	Liquid cooler LTC-1
	Part No.	Part No.
Pressure rating PN40 with certificate of conformity	04K9000	04K9000
Tube bundle: tube diameter 10/12 mm ¹⁾ instead of 6/8 mm	04K9010	04K9010
Connection D/E (Coolant IN/OUT): G 1/4"i instead of G 3/8" i		04K9015
Connection D/E (Coolant IN/OUT): G 1/2"i instead of G 3/8" i		04K9020
Connection A/B (Sample IN/OUT): G 3/8"i instead of G 1/4" i		04K9025
Connection A/B (Sample IN/OUT): G 1/2"i instead of G 1/4" i.		04K9030
Connection A/B/C/D (Sample IN/OUT, Condensate OUT, Coolant IN/OUT): G 1/4" i instead of G3/8" i	04K9035	
Connection A/B/C/D (Sample IN/OUT, Condensate OUT, Coolant IN/OUT): G 1/2" i instead of G3/8" i	04K9040	

¹⁾ = With option tube bundle diameter 10/12 mm instead of 6/8 mm.

* Standard, others on request.

Maximum cooling capacity refer to over-heated vapor or liquid and sufficient coolant.